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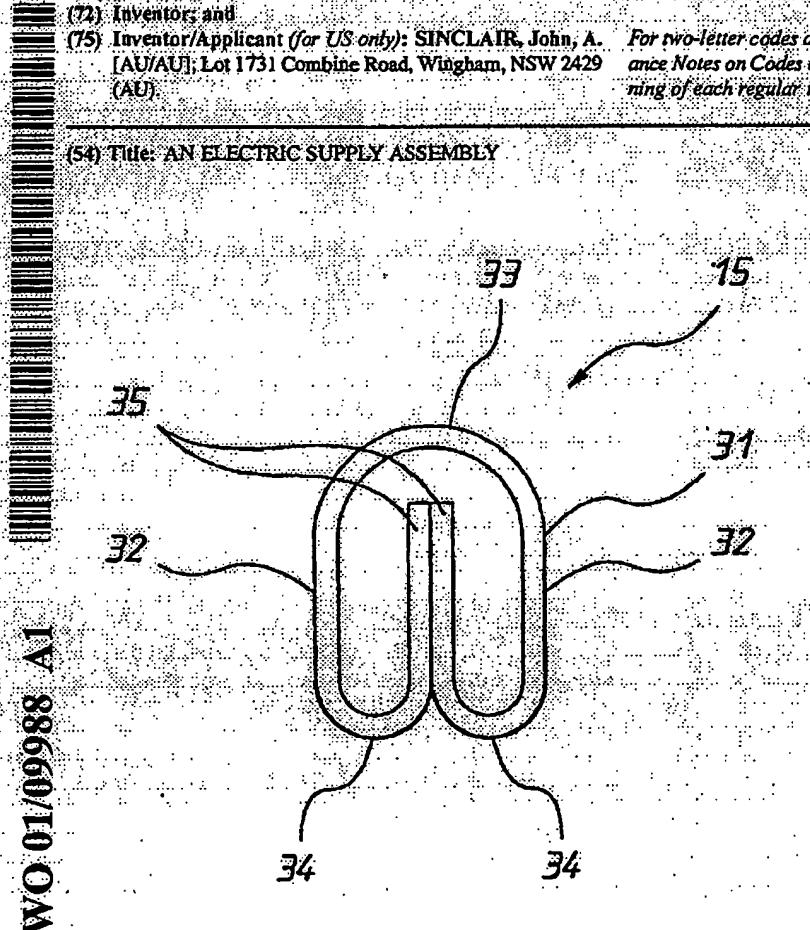
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For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: AN ELECTRIC SUPPLY ASSEMBLY



(57) Abstract: An elongated flexible conductor (15) formed of a plurality of transverse spaced ribs (31) joined by flanges (35). The flanges (35) being provided to engage a pin of an apparatus to be electrically connected to the conductor. Surrounding the conductor is an elongated flexible insulator (16) which has provided at regular intervals apertures (29). The apertures (29) provide for flow of air through the conductor (15) to aid in cooling thereof.

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An Electric Supply Assembly

Technical Field

The present invention relates to an electricity supply apparatus and in particular to track assemblies.

Background of the Invention

Described in International Patent Application PCT/AU/95/00675 is a flexible ducting system. The ducting system described in the following specification is a modification of this earlier ducting system. A similar ducting system is described in International Patent Application PCT/AU/97/00589.

The ducting systems of the above specifications have provided improved conductors for track systems. In particular, the elongated flexible conductors disclosed in the above PCT specifications prove for greater current flows than previously available in track systems.

Conductors described in the abovenumbered international applications did not cope well with increased current rates.

In respect of the abovenumbered international applications, frequently considerable resistance is encountered engaging the adaptors with the conductors.

Object of the Invention

It is the object of the present invention to provide improvements in respect of the above mentioned track systems.

Summary of the Invention

There is firstly disclosed herein an assembly including:
an elongated flexible conductor formed of a plurality of transverse ribs located at spaced locations along the conductor so that adjacent ribs are spaced; and

a flexible insulator generally surrounding the conductor and providing access thereto, and wherein the insulator is provided with apertures to allow air to move through the conductor between adjacent ribs to aid in cooling the conductor.

There is further disclosed herein an electric supply assembly including:

an elongated base providing a plurality of generally parallel coextensive slots;

an elongated flexible conductor located in each slot, each conductor being formed of a plurality of transverse ribs located at spaced locations along the conductor, so that the adjacent ribs are spaced;

a flexible insulator generally surrounding each conductor and providing access thereto, and wherein

said housing and insulator are provided with apertures to allow air to move through the conductor between adjacent ribs to aid in cooling the conductor.

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Brief Description of the Drawings

A preferred form of the present invention will now be described by way of example with reference to the accompanying drawings wherein:

Figure 1 is a schematic end elevation of an electric supply assembly;

Figure 2 is a schematic perspective view of the assembly of Figure 1;

15

Figure 3 is a schematic perspective view of an elongated flexible conductor employed in the assembly of Figure 1;

Figure 4 is a schematic end elevation of the conductor of Figure 3;

Figure 5 are two schematic end elevation of the assembly as shown in Figure 1;

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Figure 6 is a schematic enlarged view of the upper portion of the part "B" shown in Figure 5, and

Figure 7 is a schematic enlarged view of the portion "A" shown in Figure 5.

Detailed Description of the Preferred Embodiments

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In the accompanying drawing there is schematically depicted an electric supply assembly 10 which, for example, may be used as a skirting board for an internal wall of a building. The assembly 10 includes a base 11 which is intended to be fixed to a supporting wall by fasteners 12. The base 11 includes a longitudinally extending divider member 13 providing generally rigid walls 14 which cooperate with end wall 26 to define

and separate three generally parallel coextensive slots 17, 18 and 19. The slots 17, 18 and 19 are open to a horizontal access passage 20. The assembly 10, for example, would be adapted to cooperate with the electrical adaptor described in PCT/AU/97/00589.

Located in each slot 17, 18 and 19 is an elongated flexible conductor 15, each conductor 15 being generally surrounded by a flexible insulator 16. Each insulator 16 generally surrounds its associated conductor 15, and provides access thereto by a slot 50. The insulator 16 illustrated on the left-hand side of the assembly as shown in Figure 1, includes a barb 21 which engages flanges 22 to retain the insulator 16 in position. The other two insulators are retained in position by means of flanges 23.

The divider member 13 is provided at relatively regular intervals with an aperture in wall portion 24 to allow the fastener 12 to pass therethrough to enter the cavity 25. From the cavity 25 the fastener 12 passes through the wall 26. The fastener 12 would engage a clamp plate 27 which abuts the wall portion 24. Such an arrangement not only holds the assembly 10 to a supporting wall surface, but also retains the divider member 13 fixed to the base 11.

Formed integral with the wall 11 is a flexible flange 28 which is displaced from the position illustrated to provide access to the conductor 15 positioned thereabove.

As best seen in Figure 2, one of the insulators 16 is transversely slotted so as to provide apertures 29 which expose spaced portions of the associated elongated flexible conductor 15.

The flange 28 when displaced provides apertures, while the wall portion 24 is provided with apertures 30.

Each of the elongated flexible conductors 15 consist of a plurality of ribs 31, with each rib consisting of a generally "U-shaped" portion providing two arms 32 joined by an arcuate base 33. The extremity of the arms 32 extend to arcuate portions 34, each of which is attached to a longitudinally extending flange 35. The flanges 35 extend the length of the conductor 15 so as to join the ribs 31. The ribs 31 are resilient so that when the flanges 35 are separated, they are urged toward each other so as to engage the pin of the above mentioned adaptor.

The ribs 31 are separated by gaps 36.

Air is permitted to flow through the conductor 15 by passing longitudinally through the conductor 15 as well as exiting from the conductor 15 via the gaps 36 and apertures 29. To enable air to pass through the conductor 15, the flange 28 is deflected by the pins of a plug or adaptor, with the air exiting from above the conductor 15 via apertures 30 in the wall portion 24. The air leaving the apertures 30 enters cavity 37. If so required the air may then be allowed to escape to the surrounding room. For example, the outer cover 38 may be provided with vent openings. In this respect it should be appreciated that a substantial portion of the heat generated is at the location at which the conductors 15 are engaged by an adaptor or plug connecting the conductors 15 to an appliance or other item to use the electric energy. Air flow is assisted by the air being heated and rising through the conductors 15 and exiting from the assembly 10.

The apertures 29 are located at regular intervals along the conductor 15.

The divider member 13 is secured to the end wall 26 by means of longitudinally extending flanges 39 which have barbs 40. The flanges 39 are resiliently deformable so that the barbs 40 are positioned behind and engage barbs 41 of the divider 13. This "snap engagement" is best illustrated in Figure 7. Positioning of the divider 13 is also facilitated by engagement of the wall 14 (closest to the wall 26) engaging the walls 26.

The divider member 13 has secured to it the outer cover 38 by means of three clips 129, 150 and 151. The clips 129 to 151 are arranged to accommodate tolerance variations within the construction of the outer cover 38. In particular the clip 131 includes a "U-shaped" portion 152 within which projection 153 is located. Resilient deformation of the supporting stem 154 of the projection 153 and the stem 155 particularly provide this tolerance in respect of dimensions.

CLAIMS:

1. An assembly including:

an elongated flexible conductor formed of a plurality of transverse ribs located at spaced locations along the conductor so that adjacent ribs are spaced; and

a flexible insulator generally surrounding the conductor and providing access thereto, and wherein the insulator is provided with apertures to allow air to move through the conductor between adjacent ribs to aid in cooling the conductor.

2. The assembly of Claim 1 wherein each rib is of a generally "U-shaped" portion providing two arms joined by a base, the ribs being aligned so that arms are arranged in two rows, each rib further including a return portion extending from each arm and having an end projecting towards said base, said conductor further including a pair of longitudinally flanges, each flange being associated with a respective one of the rows of said arms so as to join the ends of the return portions of the row, and wherein each adjacent pair of ribs is spaced by a gap through which the air passes to cool the conductor.

3. The assembly of Claim 2 wherein the insulator has a longitudinally extending slot to provide access to said conductor.

4. The assembly of Claim 3 wherein said apertures are located at regular intervals along the conductor.

5. An electric supply assembly including:

an elongated base providing a plurality of generally parallel coextensive slots;

an elongated flexible conductor located in each slot, each conductor being formed of a plurality of transverse ribs located at spaced locations along the conductor, so that the adjacent ribs are spaced out;

a flexible insulator generally surrounding said conductor and providing access thereto; and wherein

said housing and insulator are provided with apertures to allow air to move through the conductor between adjacent ribs to aid in cooling the conductor.

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6. The supply assembly of Claim 5 wherein said insulator has a longitudinally extending slot to provide for access to said conductor.

7. In combination a conductor and insulator substantially assumed before described with reference to the accompanying drawings.

8. An electric supply assembly substantially assumed before described with reference to the accompanying drawings.

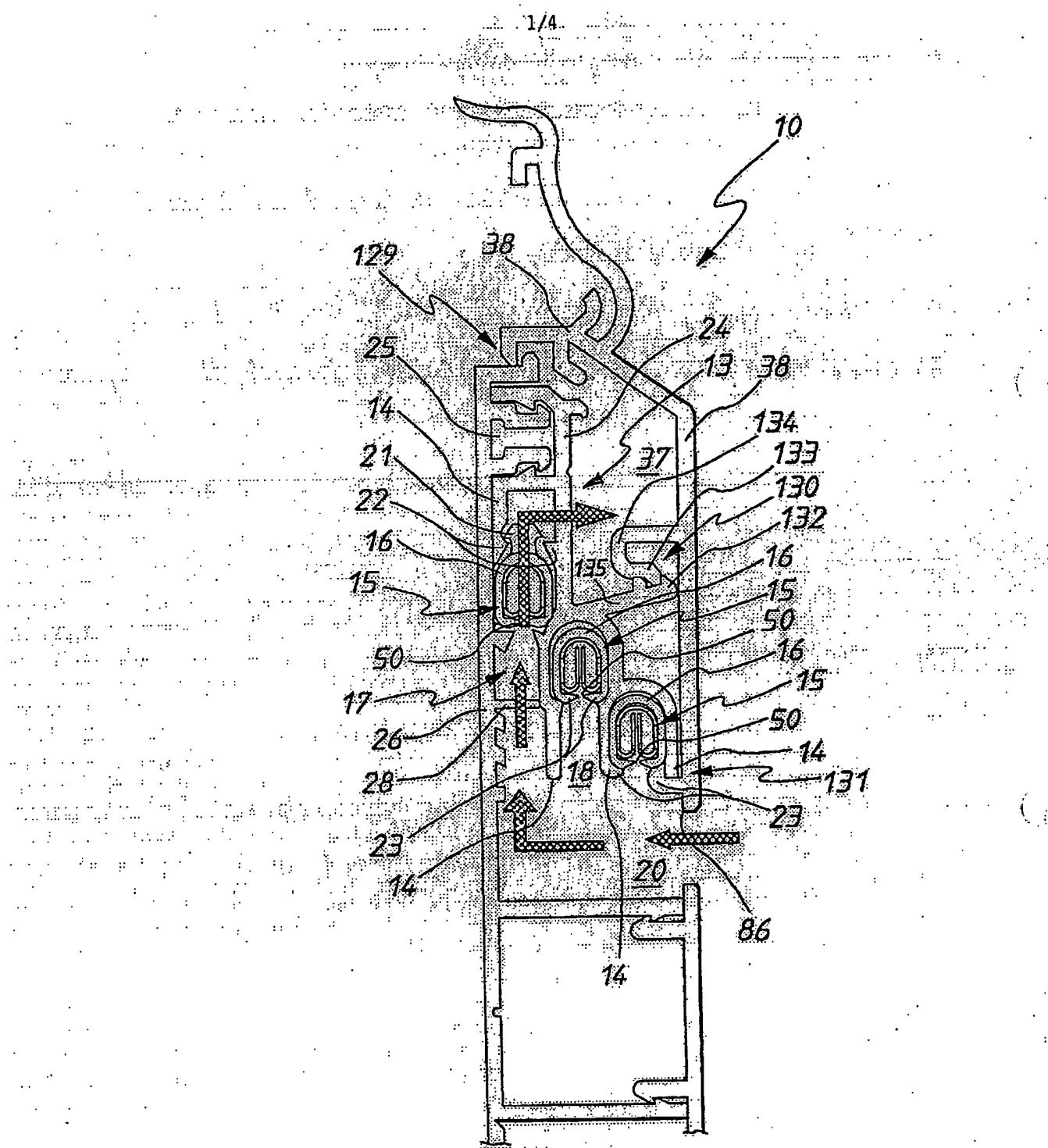
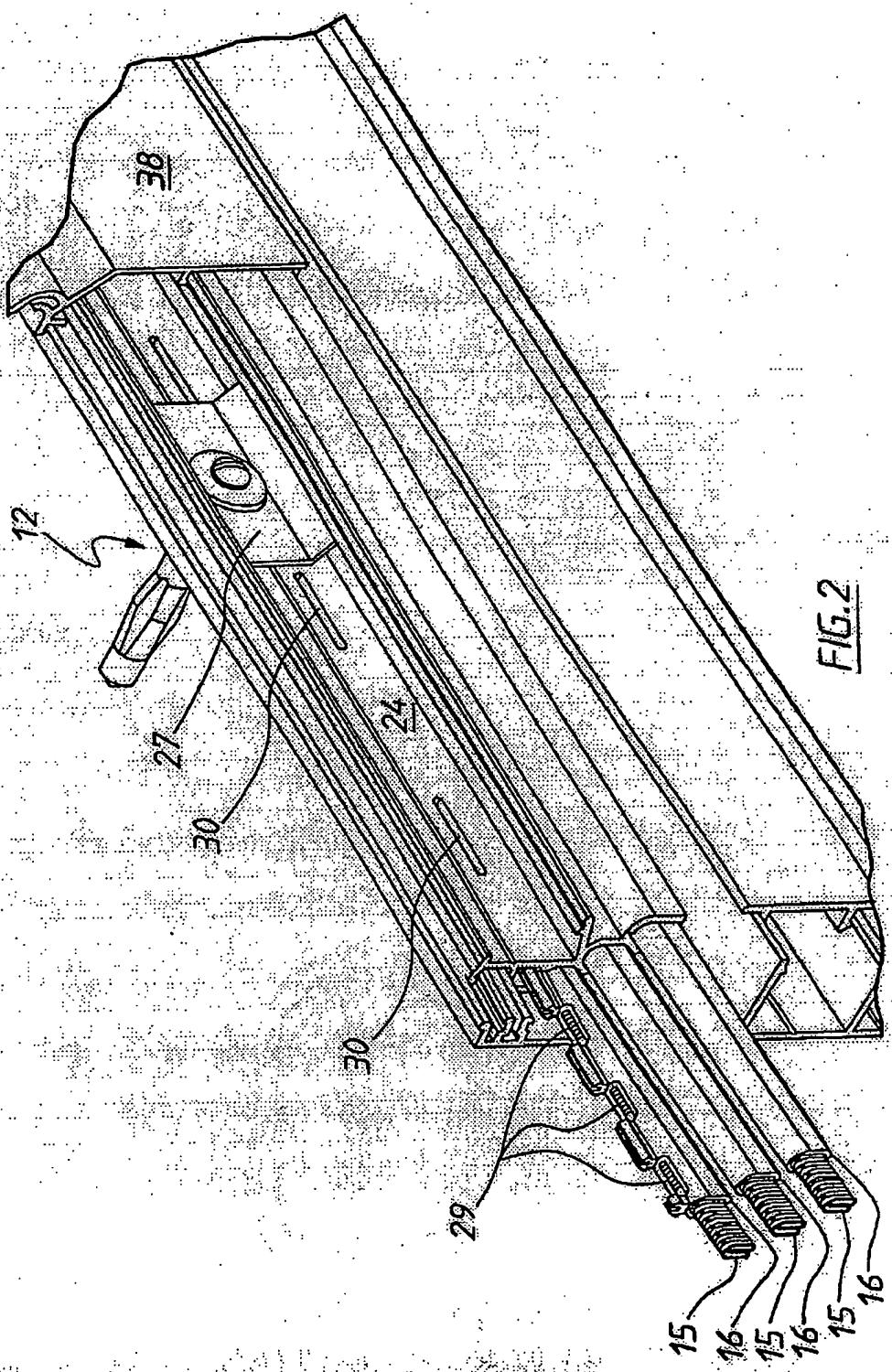


FIG. 1

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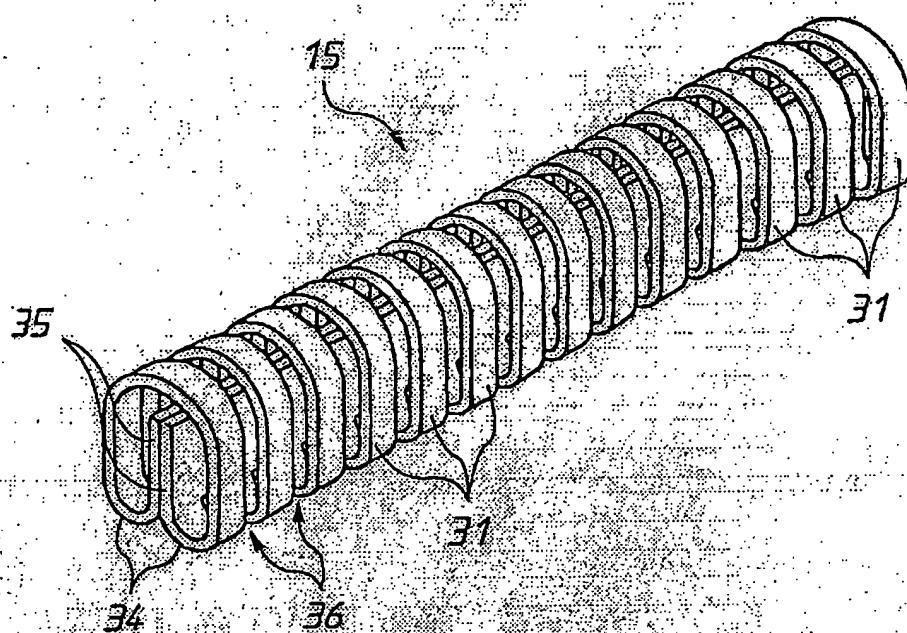


FIG.3

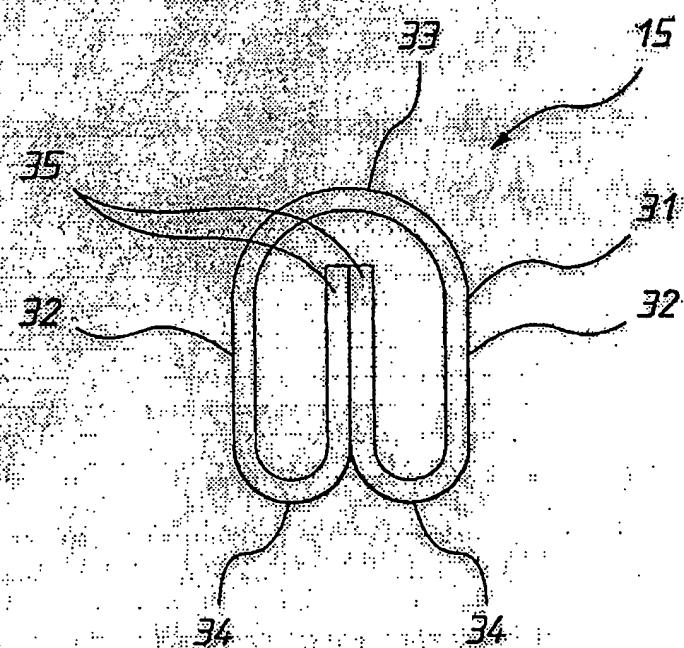


FIG.4

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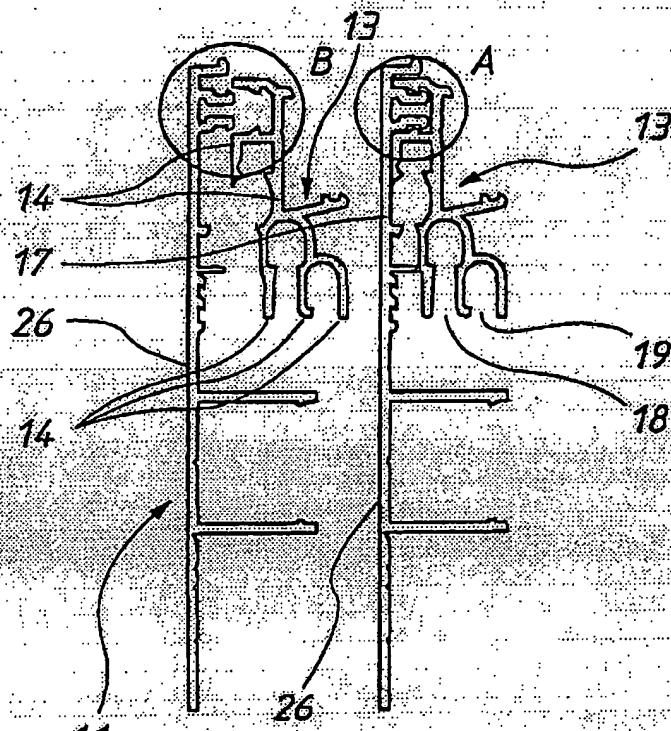


FIG.5

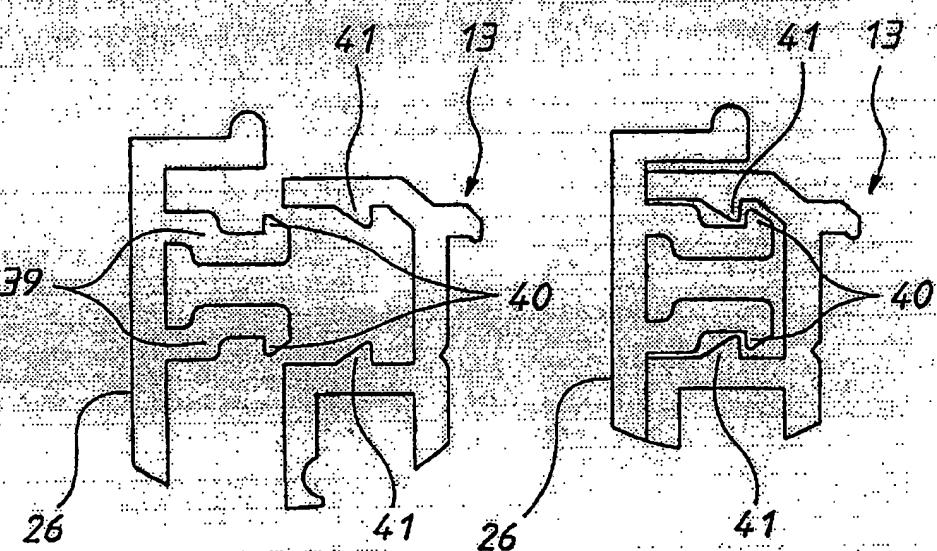


FIG.6

FIG.7

INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU00/00899

A. CLASSIFICATION OF SUBJECT MATTER

Int. Cl. ? H01R 25/14, H01B 5/00, 7/04, 17/54, H02G 3/03, 5/10

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC: H02G 3/03, 5/04, 5/10, H01R 25/14, H01B 5/00, 5/02, 5/04, 7/00, 7/04, 7/42, 17/54

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

AU: IPC as above

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

WPAT: IPC as above with key words (COOL, AIR, DISSIP, DISPERS, HEAT ; RIB, FIN, COIL, WOUND, HELD) and like terms

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	AU 36449/95 B (705664) (UNIVERSAL POWER TRACK PTY LTD) May 1996 whole document	1-5 W 0 96 / 12327
X	AU 41047/97 B (721095) (UNIVERSAL POWER TRACK PTY LTD) 2 April 1998 whole document	1-5 W 0 98 / 11634
X	DE 2743424 A (STAFF KG) 29 March 1979 whole document	1-5

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Date of the actual completion of the international search
24 October 2000

Date of mailing of the international search report

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INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU00/00899

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 93/03517 A (MASS INTERNATIONAL PTY. LTD.) 18 February 1993 whole document	1-5

INTERNATIONAL SEARCH REPORT
Information on patent family members

International application No.
PCT/AU00/00899

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Patent Document Cited in Search Report			Patent Family Member				
AU	36449/95	CA	2202536	WO	9612327	BR	9509335
		EP	787373	NZ	293885		
AU	41047/97	HR	970491	WO	9811634	EP	925620
DE	2743424	NONE					
WO	9303517	AU	24215/92	BR	9206402	EP	597980
		FI	940518	HU	67892	SG	43100
		US	5618192				

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